ATTACHMENT 1

FEDERAL REGISTER NOTICE

[7590-01-P]

U.S. NUCLEAR REGULATORY COMMISSION

10 CFR Part 50

RIN 3150-AG48

Voluntary Fire Protection Requirements for Light Water Reactors; Adoption of NFPA 805 as a Risk-Informed, Performance-Based Alternative

AGENCY: U.S. Nuclear Regulatory Commission.

ACTION: Proposed rule.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is proposing to amend its fire protection requirements for nuclear power reactor licensees. The proposed rule would permit reactor licensees to voluntarily adopt a set of fire protection requirements contained in the National Fire Protection Association (NFPA) Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition" (NFPA 805). The proposed rule would provide existing nuclear power plant licensees with an alternative set of risk-informed, performance-based fire protection requirements.

DATES: Submit comments by (insert 75 days from the date of publication). Comments received after this date will be considered if it is practical to do so, but the Commission is only able to ensure consideration of comments received on or before this date.

ADDRESSES: Submit written comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemaking and Adjudications Staff, Mail Stop O-16C1. Written comments may also be hand-delivered to 11555 Rockville Pike, Rockville, Maryland, between 7:30 a.m. and 4:15 p.m. on Federal workdays.

Documents related to this rulemaking may be examined and copied for a fee at the NRC's Public Document Room (PDR), One White Flint North, Room O1-F15, 11555 Rockville Pike, Rockville, Maryland, (since NFPA standards and copyrighted, NFPA 805 may only be examined in the PDR). Copies of NFPA 805 may be purchased from the NFPA Customer Service Department, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101 and in PDF format through the NFPA Online Catalog (www.nfpa.org) or by calling 1-800-344-3555 or 617-770-3000.

The NRC maintains an Agencywide Documents Access and Management System (ADAMS), which provides text and image files of the agency's public documents. These documents may be accessed through the NRC's Public Electronic Reading Room on the Internet at http://www.nrc.gov/NRC/ADAMS/index.html. If you do not have access to ADAMS, or if you encounter any problems in accessing the documents stored in ADAMS, contact the NRC's Public Document Room (PDR) Reference Staff by telephone at 1-800-397-4209, or 301-415-4737 or via email to pdr@nrc.gov. Certain documents (other than NFPA 805) may also be accessed electronically via the NRC's interactive rulemaking Web site: http://ruleforum.llnl.gov.

FOR FURTHER INFORMATION, CONTACT Leon E. Whitney, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001. Mr. Whitney can also be reach by telephone 301-415-3081, or via email at: lew1@nrc.gov.

SUPPLEMENTARY INFORMATION

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I. Background and Rulemaking Initiation

In 1971, the NRC promulgated General Design Criterion (GDC) 3, “Fire protection,” of Appendix A to 10 CFR Part 50. Subsequently (largely as a result of the fire at Browns Ferry

Nuclear Plant in 1975), the NRC developed specific guidance for implementing GDC 3, as provided in Branch Technical Position (BTP) Auxiliary Power Conversion Systems Branch (APCSB) 9.5-1, “Guidelines for Fire Protection for Nuclear Power Plants,” dated May 1, 1976, and Appendix A to BTP APCSB 9.5-1, “Guidelines for Fire Protection for Nuclear Power Plants Docketed Prior to July 1, 1976,” dated February 24, 1977. In the late 1970s, the NRC worked with licensees to establish configurations that meet this guidance, reaching closure on most issues. However, to resolve the remaining contested issues, the NRC published the final fire protection rule (10 CFR 50.48, “Fire Protection”) and Appendix R to 10 CFR Part 50 on November 10, 1980 (45 FR 76602).

Light water reactor licensees are currently required to have fire protection programs that comply with 10 CFR 50.48 and Criterion 3 of Appendix A to 10 CFR Part 50 (GDC 3). A fire protection program that satisfies Criterion 3 is required for all operating nuclear power plants by 10 CFR 50.48(a). Criterion 3 - “Fire protection,” requires that structures, systems and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effects of fires and explosions. Further it requires that fire detection and fighting systems of appropriate capacity and capability be provided and designed to minimize the adverse effects of fires on structures, systems, and components important to safety. These fire protection requirements are deterministic.

As stated in 10 CFR 50.48(b)(1), with the exception of Sections III.G, III.J, and III.O of Appendix R, nuclear power plants that were licensed to operate before January 1, 1979, are exempt from the requirements of Appendix R to 10 CFR Part 50, to the extent that features meeting the provisions of Appendix A to Branch Technical Position (BTP) APCSB 9.5-1 had been

accepted by the NRC staff. These reactor plants otherwise must meet 10 CFR 50, Appendix R, as well as any requirements contained in plant specific fire protection license conditions and/or technical specifications. Nuclear power plants that were licensed to operate after January 1, 1979, must comply with 10 CFR 50.48(a) as well as any plant-specific fire protection license conditions and/or technical specifications. Their fire protection license conditions typically reference Safety Evaluation Reports (SERs) generated by the NRC as the product of initial licensing reviews against either Appendix A to BTP APCSB 9.5-1 and the criteria of certain sections of 10 CFR 50, Appendix R, or against NUREG 0800, the NRC's Standard Review Plan (SRP) for fire protection (which closely follows the structure of 10 CFR 50, Appendix R).

The NRC has issued approximately 900 exemptions from the technical requirements specified in Appendix R. These exemptions were granted to licensees that submitted a technical evaluation demonstrating that an alternative fire protection approach satisfied the underlying safety purpose of Appendix R. During the initial implementation period for "pre-1979 Appendix R plants," the NRC granted exemptions under the provisions of 10 CFR 50.48(c)(6), which has since been deleted. For exemptions requested by "pre-1979" plants after the licensee's initial Appendix R implementation period, the NRC has conducted its reviews in accordance with the provisions specified in 10 CFR 50.12 "Specific exemptions." "Post-1979" plants have also requested and, when deemed acceptable by the staff, received approval to deviate from their licensing requirements. The processing of exemption and deviation requests has placed a significant burden on the resources of the NRC and the nuclear industry.

Industry representatives and some members of the public have described the current deterministic fire protection requirements as "prescriptive" and an "unnecessary regulatory

burden." Beginning in the late 1990s, the Commission provided the NRC staff with guidance for identifying and assessing performance-based approaches to regulation (see SECY-00-0191, "High-Level Guidelines for Performance-Based Activities," dated September 1, 2000, and Staff Requirements Memorandum (SRM) entitled "White Paper on Risk-Informed and Performance-Based Regulation," dated March 1, 1999, issued subsequent to SECY-98-144). This guidance augmented the risk-related guidance in the NRC's Probabilistic Risk Assessment (PRA) Policy Statement and Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," dated July 1998.

In SECY-00-0009 dated January 13, 2000, the NRC staff requested and received Commission approval for proceeding with a rulemaking to permit reactor licensees to adopt NFPA 805 as a voluntary alternative to existing fire protection requirements. On February 24, 2000, in a Staff Requirements Memorandum (SRM) titled "Rulemaking Plan, Reactor Fire Protection Risk-Informed, Performance-Based Rulemaking," the Commission directed the staff to proceed with this rulemaking.

The NFPA Standards Council approved 2001 Edition of NFPA 805 as a performance-based American National Standard for light water nuclear power plants, effective February 9, 2001. The NRC cooperatively participated in the development of NFPA 805. The standard specifies the minimum fire protection requirements for existing light water nuclear power plants during all modes ("phases" in NFPA 805) of plant operation, including, shutdown, degraded conditions, and decommissioning.

The Nuclear Energy Institute (NEI) expressed support for the rulemaking in a letter dated September 13, 2001. The staff prepared a memorandum, dated October 9, 2001, informing the Commission that the staff had revised the rulemaking plan such that the staff would submit the proposed rule revision to the Commission by July 2002, and the final rule revision 12 months after the NRC published the proposed rule revision for public comment. Additionally, the staff informed the Commission that it was pursuing development of the implementation guidance to be endorsed by a regulatory guide. NEI is currently developing this guidance.

Draft Rule Language and Public Comment

On December 20, 2001 (66 FR 65661), the NRC published in the *Federal Register* draft rule language proposing to endorse NFPA 805, and posted this draft language on the NRC's interactive Rulemaking Forum Web site at http://ruleforum.llnl.gov. The NRC requested public comment on the draft rule language.

The comment period on the draft rule language ended on February 4, 2002. In response to the *Federal Register* notice the NRC received five sets of comments from the NRC staff, industry consultants, licensees and industry organizations, as summarized below:

An NRC staff member pointed out that the draft rule language inadvertently overlooked an entire class of licensees (i.e., the so-called "post January 1, 1979 licensees"). The NRC agrees with this comment and has corrected this oversight in the proposed rule by including this class of licensee.

The Nuclear Energy Institute (NEI) disagreed with a proposed NRC exception to NFPA 805 which would not endorse the italicized exception contained in Section 3.3.5.3 of NFPA 805. This italicized exception had the effect of permitting existing electrical cable which does not comply with a flame propagation test acceptable to the NRC to remain as is. Compliance with an electrical cable flame propagation test has been in NRC guidance since 1981 (NUREG 0800, the NRC's Standard Review Plan or SRP). The largest single contributor to combustible fire loading in most areas of a nuclear power plant is electrical cable insulation in open cable trays. This was demonstrated by the cable fire at Brown's Ferry in 1975. The electrical cable insulation safety hazard in nuclear power plants should be mitigated by successful completion of a cable insulation fire propagation test (or the application of a fire retardant coating or the installation of fixed, automatic fire suppression, as stated in the rule language). Therefore, the NRC can not endorse the italicized exception contained in Section 3.3.5.3 of NFPA 805.

NEI submitted a number of other specific comments, which were endorsed as a group by the Tennessee Valley Authority (TVA), none of which resulted in the NRC choosing to make changes to the draft rule language. These comments regarded: (1) appropriate radiological limits for fire suppression activities; (2) licensee freedom to establish secondary fire protected safe shutdown paths; (3) the standing of "docketed licensing-basis information" within Chapter 3 of NFPA 805; (4) the need for the NFPA 805 Section 3.5.4 seismic/Class 1E emergency power buses fire pump requirements; (5) the need for seismically designed fire hose station standpipes in lieu of a plan for manual fire capabilities following an earthquake (see Section 3.6.4 of the standard); (6) the degree of flexibility in the deterministic 3-hour fire area boundary rating requirement of Section 4.2.3.2 of NFPA 805; (7) the use of recovery actions within the deterministic approach of the standard.

An industry consultant commented that the NRC should endorse, as part of the rulemaking, NFPA 805, Appendix B, “Nuclear Safety Analysis,” and its post-fire safe shutdown circuit analysis methodology for use by licensees in meeting the standard. Appendix B is now endorsed as discussed in the **Discussion of Proposed Rule Language** section below.

Another comment from an industry consultant stated that the rule should permit licensees to adopt only those NFPA 805 requirements that relate to post-fire safe shutdown, without meeting NFPA 805 requirements related to combustible/ignition control, and detection and suppression. This comment did not result in the NRC choosing to make any changes to the draft rule language.

II. Discussion

Discussion of Proposed Rule

The NRC has conducted a review of the technical requirements contained in NFPA 805, related to nuclear safety and radiological release, and has concluded that NFPA 805, taken as a whole, provides an acceptable alternative for satisfying General Design Criterion 3 (GDC 3) of Appendix A to 10 CFR Part 50. The standard contains a number of changes to the character of fire protection features when compared to current fire protection requirements (e.g., no cold shutdown requirement, no specific requirement for emergency lighting, and no provision for an alternative shutdown capability). However, the NRC participated in the development of the standard, and has determined that NFPA 805, as excepted, when taken as an integrated whole, meets the underlying intent of the NRC’s existing fire protection regulations and guidance, and achieves defense-in-depth and the goals, performance objectives, and performance criteria specified in Chapter 1 of the standard.

To determine that NFPA 805 contains the elements of an acceptable fire protection program, the NRC uses Regulatory Guide 1.189, "Fire Protection for Operating Nuclear Power Plants". Section C, "Regulatory Position," contains a description of the eight elements of an acceptable fire protection program. The NRC determined that all eight elements are adequately addressed in NFPA 805:

1. The delineation of organization, staffing, and responsibilities.

Section 3.2.2 of the standard defines the management authorities and responsibilities and establishes the general policy for the fire protection program. This section adequately meets the intent of this element in RG 1.189.

2. A fire hazards analysis sufficient to perform safe shutdown functions and minimize radioactive material releases in the event of a fire.

Within the standard, nuclear safety goals and performance criteria are defined in Chapter 1. Section 2.4.2 defines the methodology for preforming a nuclear safety capability assessment necessary to meet these goals and criteria. The criteria in the standard is adequate to meet the intent of this element of RG 1.189.

3. The limitation of damage to structures, systems, and components important to safety so that the capability to safely shut down the reactor is ensured.

Within the standard, Chapters 4 & 5 establish the methodologies to determine the fire protection elements needed to limit fire damage and protect structures, systems, and components important to safety. The criteria in the standard is adequate to meet the intent of this element of RG 1.189.

4. Evaluation of fire test reports and fire data to ensure they are appropriate and adequate for ensuring compliance with regulatory requirements.

Section 3.11.2 establishes fire test qualifications for fire barriers to be in accordance with NFPA 251, Standard Methods for tests of Fire Endurance of Building Construction and Materials or E-119, Standard Test Methods for Fire Tests of Building Construction and Materials. These standards are adequate and meet the intent of this element in RG 1.189.

5. Evaluation of compensatory measures for interim use for adequacy and appropriate length of use.

The standard has an adequate definition of compensatory actions and requires procedures to be established to accomplish these compensatory actions and limit the duration, Sections 1.6.8 and 3.2.3(2) respectfully. The criteria in the standard is adequate to meet the intent of this element of RG 1.189.

6. Training and qualification of fire protection personnel appropriate for their level of responsibility.

Section 2.7.3.4 discusses the qualification of personnel who apply engineering analysis and numerical models. Section 3.4 discuss the training and qualifications of the fire brigade and plant personnel who'll respond to a fire. The criteria in the standard is adequate to meet the intent of this element of RG 1.189.

7. Quality assurance.

Through-out the standard and in particular, Section 2.7, discusses the requirements for program documentation, configuration control, and quality. The NRC considers the standard adequate to meet the quality assurance guidance in RG 1.189.

8. Control of fire protection program changes.

Chapter 2 discusses plant change evaluations and configuration control of design basis documents. These sections will assist in maintaining compliance with the fire protection regulatory requirements and are adequate to meet the change control guidance in RG 1.189.

For these reasons, the NRC believes that NFPA 805 adequately provides requirements to meet the elements of an acceptable fire protection program.

Public Health and Safety Considerations: The NRC has determined that public health and safety and the common defense and security would continue to be adequately protected under NFPA 805. This determination is based, in part, on the goals, objectives, and performance criteria specified in Chapter 1 of NFPA 805. Those goals, objectives, and performance criteria provide for

defense-in-depth to control fires; prevention of radioactive releases that adversely affect the public; and control of plant reactivity, inventory, and pressure, as well as decay heat removal, vital auxiliaries, and process monitoring.

The overall approach of NFPA 805 is consistent with the key principles for evaluating licensing basis changes, as described in NRC Regulatory Guide (RG) 1.174. Namely, the proposed change is consistent with defense-in-depth philosophy, maintains sufficient safety margins, and when the proposed change results in an increase in core damage frequency (CDF) or risk, the increase is small and consistent with the intent of the Commission's Safety Goal Policy Statement. In Section 2.2.9 of the standard, objective criteria for plant change evaluations are set forth: "a risk-informed plant change evaluation shall be performed and the results used ... to ensure that the public risk associated with fire-induced nuclear fuel damage accidents is low and that adequate defense-in-depth and safety margins are maintained. Therefore, the concepts and processes in NFPA 805 comprise a risk-informed, integrated, performance-based decision making process for evaluating plant changes related to fire protection systems and features. In accordance with 10 CFR 50.59(c)(4), because NFPA 805 contains its own change control process, reactor plant changes conducted under NFPA 805 therefore will not be subject to the requirements of 10 CFR 50.59.

As stated in Section 2.4.4 of NFPA 805, the Standard's general methodology requires that the plant change evaluation process must consist of an integrated assessment of the acceptability of change in risk, defense-in-depth, and safety margins. This approach requires engineering evaluations to assess the adequacy of the fire protection elements (e.g., combustible and ignition

control, fire detection and suppression, and fire confinement) and the nuclear safety element (e.g., post-fire safe shutdown capability), to ensure that defense-in-depth philosophy is maintained.

The NFPA 805 approach also includes requirements, Section 2.4.3, for the application of acceptable codes and standards to assess the calculated margin between designed and qualified fire protection features versus specified nuclear safety and radioactive release performance criteria, as well as provisions for evaluating acceptable change in risk in terms of small increases in Core Damage Frequency (CDF) and Large Early Release Frequency (LERF) based on risk acceptance guidelines, as presented in NRC Regulatory Guide 1.174.

Chapters 1 and 2 of NFPA 805 specify performance criteria, nuclear safety objectives, and radioactive release performance criteria; provide flexibility for the program, processes, and analytical approach; and ensure that a performance failure will not result in an immediate safety concern (through application of the fire protection defense-in-depth philosophy and the assurance of adequate safety margins). Potential performance failures are assessed in advance to ensure that the licensee is capable of detecting the performance failure, and that adequate time is available to take the needed corrective actions upon detection.

NFPA 805 achieves the risk principles of the Commission's PRA Policy Statement (60 FR 42622) in the following manner:

"PRA Policy Statement 1: The use of PRA technology should be increased in all regulatory matters to the extent supported by the state-of-the-art in PRA methods and data

and in a manner that complements the NRC's deterministic approach and supports the NRC's traditional defense-in-depth philosophy."

NFPA 805 Appendices B, C and D providing methodologies for nuclear safety analysis (which includes post-fire safe shutdown circuit analysis), fire modeling, and PSA methods respectively, are state-of-the-art analytical approaches representing a consensus of members of a diverse national standards committee (the NFPA Technical Committee on Fire Protection for Nuclear Facilities).

The NFPA 805 deterministic approach (Section 4.2.3) was derived from existing NRC deterministic requirements.

In Section 4.2.4.1.5 of NFPA 805, the alternative NFPA performance-based approach includes the requirement that "the effectiveness of fire protection systems and features shall demonstrate that the circuits and components required to achieve the nuclear safety performance criteria are maintained free of fire damage." Combined with the deterministic requirements of Section 3.3.1.2 (Control of Combustible Materials) and Section 3.3.1.3 (Control of Ignition Sources), Sections 3.4 (Industrial Fire Brigade), 3.5 (Water Supply), 3.6 (Standpipe and Hose Stations), 3.7 (Fire Extinguishers), 3.8 (Fire Alarm and Detection Systems), 3.9 (Automatic and Manual Water-based Fire Suppression Systems), 3.10 (Gaseous Fire Suppression Systems) and 3.11 (Passive Fire Protection Features), and the Nuclear Safety Goal, Objective and Performance Criteria of Chapter 1 of NFPA 805, NFPA strongly supports the NRC's traditional fire protection defense-in-depth and nuclear safety defense-in-depth philosophies.

> "PRA Policy Statement 2: PRA and associated analyses (e.g. sensitivity studies, uncertainty analyses, and importance measures) should be used in regulatory matters, where practical within the bounds of the state-of-the-art, to reduce unnecessary conservatism associated with current regulatory requirements, license commitments, and staff practices..."

The performance-based approach of NFPA 805 (Section 4.2.4) would utilize the concepts of: damage threshold; minimum damage threshold; fire scenario for the fire area under consideration; and sufficient margin between the maximum expected fire scenario and the limiting fire scenario in the context of protection of required nuclear safety success paths. These performance-based approach concepts reduce the conservatisms associated with the current largely deterministic reactor plant fire protection requirements, license commitments and NRC staff practices.

> "PRA Policy Statement 3: PRA evaluations in support of regulatory decisions should be as realistic as practicable and appropriate supporting data should be publicly available for review."

Section 2.7.1.1 of NFPA 805 says: "The analyses performed to demonstrate compliance with this standard shall be documented for each nuclear power plant (NPP). The intent of the documentation is that the assumptions be clearly defined and that the results be easily understood, that results be clearly and consistently described, and that sufficient detail be provided to allow future review of the entire analyses. Documentation shall be maintained for the

life of the plant and be organized carefully so that it can be checked for adequacy or accuracy either by an independent reviewer or by the AHJ."

Section 2.7.2 of NFPA 805 addresses configuration control, and Section 2.7.3 addresses the quality of the calculational or numerical models, the appropriateness of their application, and the qualifications of the personnel who apply them.

Therefore, there would be a well-founded expectation that licensee NFPA 805 analyses would be readily available for review by the NRC or independent reviewers supporting licensee quality assurance activities.

PRA Policy Statement 4: The Commission's safety goals for nuclear power plants and subsidiary numerical objectives are to be used with appropriate consideration of uncertainties in making regulatory judgements on the need for proposing and backfitting new generic requirements on nuclear power plant licensees."

As a voluntary regulation, the proposed rule does not represent a new generic requirement on nuclear power plant licensees, and could be considered to not be bound by PRA Policy Statement 4. However, the following two qualitative safety goals and two supporting quantitative objectives would be met by licensees meeting Section 1.3.1 of NFPA 805 (Nuclear Safety Goal) and Section 1.3.2 of NFPA 805 (Radioactive Release Goal), and their supporting NFPA 805 nuclear and radioactive release objectives and performance criteria.

The two NRC Commission's qualitative safety goals are: (1) Individual members of the public should be provided a level of protection from the consequences of nuclear power plant operation such that individuals bear no significant additional risk to life and health, and (2) Societal risks to life and health from nuclear power plant operation should be comparable to or less than the risks of generating electricity by viable competing technologies and should not be a significant addition to other societal risks.

Two quantitative objectives are used in determining achievement of the above safety goals: (1) The risk to an average individual in the vicinity of a nuclear power plant of prompt facilities that might result from reactor accidents should not exceed one-tenth of one percent (0.1 percent) of the sum of prompt fatality risks resulting from other accidents to which members of the U.S. population are generally exposed, and (2) The risk to the population in the area near a nuclear power plant of cancer fatalities that might result from nuclear power plant operation should not exceed one-tenth of one percent (0.1 percent) of the sum of cancer fatality risks resulting from all other causes.

As an outgrowth of the Commission's PRA Policy Statement, the NRC has embarked upon an effort to risk-inform 10 CFR Part 50. In SECY-99-264 (later endorsed in a Staff Requirements Memorandum (SRM) dated February 3, 2000) the NRC staff informed the Commission that it would conduct its work applying the set of safety principles established in Regulatory Guide (RG) 1.174. The NRC staff stated that it expects that changes to requirements would be consistent with the defense-in-depth philosophy, would maintain sufficient safety margins, would be performance-based to the extent possible, and would result in safety improvements or only small increases in risk, and would reduce any unnecessary burden. The NRC staff also stated that their

approach would also ensure that adequate protection continues to be maintained. These considerations are addressed individually below:

Defense-in-Depth: This topic is fully discussed in connection with PRA Policy Statement 1 above.

Sufficient Safety Margins: Plant change evaluations are required by Section 2.4.4 of the standard. Section 2.4.4.3 of the standard states that plant change evaluations shall ensure that sufficient safety margins are met. Section A.2.4.4.3 of the standard explains safety margins in theory and in the contexts of fire modeling and fire PSA. Section 4.2.4.1.4 of the standard requires sufficient safety margin between the maximum expected fire scenarios and the limiting fire scenarios for required equipment and cables.

Performance-Based: NFPA 805 is inherently performance-based in that it requires the achievement of performance criteria.

Safety Improvements or Small Increases in Risk: NFPA has provisions for evaluating acceptable change in risk in terms of CDF (core damage frequency) and LERF (large early release frequency). Section 2.4.4.1 of the standard says that “The change in public health risk from any plant change shall be acceptable to the AHJ (NRC). CDF and LERF shall be used to determine the acceptability of the change. The NRC bases its risk acceptance guidelines on the information provided in NRC Regulatory Guide 1.174, An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant Specific Changes to the Licensing Basis. In RG 1.174 “small” is defined in relation to total CDF (e.g., when the calculated increase in risk is

calculated to be in the range of 10E-6 per reactor year to 10E-5 per reactor year, the risk increase is acceptable if it can be reasonably shown that the total CDF is less than 10E-4 per reactor year).

Unnecessary Burden: The proposed rule is expected to reduce the need for licensee developed exemption requests targeted at relief from the existing deterministic, prescriptive fire protection requirements. Additionally, the proposed rule is expected to result in net reduced operating, training, and maintenance costs (through the elimination of conservatively required deterministic barriers and fire protection features) over the remaining life of the reactor plants and during their decommissioning.

Adequate Protection: Licensees which adopt NFPA 805 will be required by Section 2.4.4.1 of the standard to monitor the cumulative risk changes. Therefore, a series of small increases in public health risk (see “Safety Improvements or Small Increases in Risk” above) will not be allowed to accumulate into a significant total increase in fire risk. Therefore, adequate protection of the public from the effects of nuclear power plant fires will be maintained.

The NRC has considered the regulatory practicality of the proposed rule. The areas considered are as follows:

Change Control Processes: Sections 2.2(h), 2.2(i), 2.2(j), 2.2.9, 2.2.10, 2.4.4,, 2.6, and 2.7 contain salient direction relating to change control processes. The major change control process features addressed in these sections are plant change evaluations (assessment of changes in public health risk against risk acceptance criteria, defense-in-depth and safety margins), a plant fire risk performance monitoring program (addressing availability, reliability and

performance and including corrective action), and fire protection program documentation adequacy, analysis quality, and configuration control. Under 10 CFR 50.59(c)(4), the existence of these change control process features would therefore mean that the provisions of 10 CFR 50.59 would not apply to licensees which have adopted NFPA 805. Therefore, the NRC expects no difficulties in licensee efforts to control and document plant changes under this rule.

Licensee Implementation: Sufficient methodologies are provided in NFPA 805 and adequate risk, fire and nuclear safety data are available to implement them. In Section III of this FRN, NFPA 805 analytical processes for plant-wide reviews are summarized. Therefore, the NRC expects no difficulties in licensee's efforts to implement this rule.

Inspectability: Section 2.7.1.1 says: "The analyses performed to demonstrate compliance with this standard shall be documented for each nuclear power plant (NPP). The intent of the documentation is that the assumptions be clearly defined and that the results be easily understood, that results be clearly and consistently described, and that sufficient detail be provided to allow future review of the entire analyses. Documentation shall be maintained for the life of the plant and be organized carefully so that it can be checked for adequacy and accuracy either by an independent reviewer or by the AHJ." Therefore, the NRC expects no difficulties in inspector efforts to review licensee implementation of this rule.

Enforcability: The proposed rule does not affect the existing requirements of 10 CFR 50.48(a), which include fire protection plan compliance with General Design Criterion (GDC) 3 - "Fire Protection," seven specific fire protection plan requirements and features, the requirement to retain fire protection plan changes "until the Commission terminates the reactor

license" and fire protection procedures for three years after they are superceded. Section (c)(3) of the proposed rule requires adopting licensees to maintain a fire protection program which complies with NFPA 805. Therefore, all requirements of that standard would be subject to enforcement, including the nuclear and radiological goals, performance objectives and performance criteria of Chapter 1 of NFPA 805. Therefore, the NRC expects no difficulties in enforcing against licensee failures to comply with 10 CFR 50.48(a), (f) or the main body of NFPA 805.

Quality Assurance: Section 2.7.3 of NFPA 805 requires that each analysis, calculation or evaluation performed shall be independently verified, calculational models and numerical methods shall be verified and validated, engineering methods and numerical models shall be used only within the scope, limitations and assumptions prescribed for them, personnel applying engineering analyses and numerical models shell be competent in their field and experienced in the application of these methods as they relate to nuclear power plants, nuclear power plant fire protection, and power plant operations. Therefore, the NRC expects no difficulties in licensee efforts to maintain the quality of their application of NFPA 805 requirements.

Section-by-Section Analysis

50.48(c) *National Fire Protection Standard NFPA 805.*

The proposed rule would add a new Paragraph (c) to 10 CFR 50.48. Paragraph (c) would permit reactor licensees to voluntarily adopt NFPA 805, with certain exceptions stated in the rule language, as an alternative set of fire protection requirements for the operation and/or

decommissioning of light-water reactors. NFPA 805, when and if adopted by licensees, would constitute an acceptable means for operating reactors to comply with 10 CFR 50.48(a), and would be an alternative to meeting their existing fire protection requirements, and for decommissioning reactors would be an alternative to meeting 10 CFR 50.48(f).

50.48(c)(1) Approval of incorporation by reference; 50.48(c)(2) *Exceptions, modifications and supplementation of NFPA 805.*

Appendices B, C, and D of NFPA 805 constitute methodologies for conducting nuclear safety circuit analyses, nuclear power plant fire hazard modeling, and fire probabilistic safety assessments, respectively. At a number of locations within the standard appendices are referred to as “acceptable methods,” and at other locations within the standard the reader is directed to them for “considerations when performing analyses.” Although each of the three appendices begins with a disclaimer in the form “Appendix (letter B, C or D) is not a part of the requirements of this NFPA document but is included for informational purposes only,” the methodologies contained therein are nevertheless considered by the NRC to be “specified in NFPA 805" within the meaning of section (c)(4) of the proposed rule language, and therefore their use by licensees need not be preceded by NRC approval of a license amendment request.

50.48(c)(2)*(i) Life Safety Goal;* 50.48(c)(2)*(ii) Plant Damage/Business Interruption Objectives.*

The Life Safety Goal and Plant Damage/Business Interruption Objectives of NFPA 805 are not within the regulatory charter of the NRC (see the Energy Reorganization Act of 1974) and, therefore, the NRC does not endorse them.

50.48(c)(2)*(iii) Use of Feed-and-Bleed.*

This paragraph does not accept the use of a high-pressure charging/injection pump coupled with the pressurizer PORVs as the sole fire protected shutdown path for maintaining reactor coolant inventory, pressure control, and decay heat removal capability (i.e., feed-and-bleed) for PWRs.

50.48(c)(2)*(iv) Uncertainty Analysis.*

This paragraph makes clear that licensees need not prepare uncertainty analyses when conducting deterministic analyses under Section 2.2.6 and Chapter 4 of NFPA 805.

50.48(c)(2)*(v) Existing Cables.* In lieu of installing cables meeting flame propagation tests as required by Section 3.3.5.3 of the standard, a flame retardant coating may be applied to the electric cables, or alternatively an automatic fixed fire suppression system may be installed. Either alternative would establish an equivalent level of fire protection to that provided by the presence of flame propagation test compliant cables. The italicized exception to Section 3.3.5.3 is not endorsed to preclude non-flame-propagation qualified cable from remaining in place in a reactor plant without mitigation unless previously approved in the licensing basis.

Electrical flame propagation test compliance has been in NRC guidance since 1981 (NUREG 0800, the NRC's Standard Review Plan or SRP). The NRC is unaware of any licensees which are using electrical cable which does not comply with flame propagation tests where an alternate means of protection (e.g., fire retardant coating or automatic fixed suppression) has not been provided. Accordingly, the NRC does not expect any licensee to be adversely affected by this proposed exception.

50.48(c)(2)*(vi) Water Supply and Distribution.* The italicized exception to Section 3.6.4 is not endorsed.

This paragraph would not allow a standpipe/hose station system in place of seismically qualified standpipes and hose stations unless previously approved in the licensing basis. Seismically qualified standpipes and hose stations have been in NRC guidance since 1976 (Appendix A to Branch Technical Position (BTP) APCSB 9.5-1. The NRC is unaware of any licensees using a non-seismically qualified standpipe/hose station system in place of a seismically qualified standpipe/hose station system. Accordingly, the NRC does not expect any licensee to be adversely affected by this proposed exception.

50.48(c)(3) *Compliance with NFPA 805*.

The use of the term "Authority Having Jurisdiction" (AHJ) within the standard, for the purposes of this rulemaking, means the U.S. Nuclear Regulatory Commission.

For purposes of transitioning to NFPA 805, the NRC expects that licensees will be able to treat existing reactor plant fire protection elements as “previously approved” for the purposes of the Chapter 3 delineation of fundamental program elements. This approach would normally be acceptable because licensees should either be in compliance with regulatory requirements or should have obtained approval from the NRC for exemptions or deviations from those requirements. Fire protection elements that have not been previously reviewed and approved would continue to be subject to normal NRC inspection and enforcement.

50.48(c)(3)(i) A licensee may maintain a fire protection program that complies with NFPA 805 as an alternative to complying with paragraph (b) of this section for plants licensed to operate before January 1, 1979; the fire protection license conditions for plants licensed to operate after January 1, 1979; or paragraph (f) of this section for plants for which licensees have submitted the certifications required under 10 CFR 50.82(a)(1). The licensee shall submit a request to comply with NFPA 805 in the form of an application for license amendment under § 50.90. The application must identify any orders and license conditions that must be revised or superseded, and contain any necessary revisions to the plant’s technical specifications and the bases therefore. The Director of the Office of Nuclear Reactor Regulation, or a designee of the Director, may approve the application if the Director or designee determines that the licensee has identified orders, license conditions, and the technical specifications that must be revised or superseded, and that any necessary revisions are adequate. Any approval by the Director or the designee of the Director shall be in the form of a license amendment approving the use of NFPA 805 together with any necessary revisions to the technical specifications.

This paragraph of the proposed rule language would allow licensees to adopt NFPA 805 as an acceptable means of meeting the fire protection program and GDC 3 requirements of 10 CFR 50.48(a). This section also describes the methods by which the licensees will submit their requests to adopt NFPA 805. If the NRC approves a licensee's request to use NFPA 805, the Director of NRR (or a designee of the Director) will issue a license amendment that: (1) removes superseded license conditions, and (2) includes a license condition imposing the use of NFPA 805. In addition, the NRC will issue an order revoking unnecessary and superseded exemptions and orders.

Licensees who are approved under paragraph (c)(3)(i) to use NFPA 805 are permitted to later return to compliance with paragraph (b) and their previous licensing basis. However, each licensee must comply with all applicable requirements, including submitting an application for a license amendment, and, as applicable, a request for exemption if the licensee wishes to reinstate a revoked exemption.

50.48(c)(3)(ii) The licensee shall complete its implementation of the methodology in Chapter 2 of NFPA 805 (including all required evaluations and analyses) and, upon completion, modify the fire protection plan required by paragraph (a) of this section to reflect the licensee’s decision to comply with NFPA 805, before changing its fire protection program or nuclear power plant as permitted by NFPA 805.

This section of the proposed rule language requires licensees to complete all of the NFPA 805 evaluations and analyses, and also modify their fire protection plan to indicate that they are adopting NFPA 805 as an alternative set of fire protection requirements. This is to ensure that the

changeover to an NFPA 805 configuration is conducted in a complete, controlled, integrated, and organized manner. This also ensures that the NRC reactor oversight (inspection) process can effectively identify and monitor the changeover. This requirement of the proposed rule has the effect of precluding licensees from implementing NFPA 805 on a partial or selective basis (e.g., in some fire areas and not others, or truncating the methodology within a given fire area).

50.48(c)(4) *Alternative Methods and Analytical Approaches.* A licensee may submit a request to use alternative methods and analytical approaches, including fundamental fire protection program and minimum design requirements identified in Chapter 3 of NFPA 805, in lieu of those methods and approaches specified in NFPA 805. The request must be in the form of an application for license amendment under § 50.90. The Director of the Office of Nuclear Reactor Regulation, or a designee of the Director, may approve the application if the Director or designee determines that the alternative methods and analytical approaches:

This section of the proposed rule language provides licensees with a mechanism to gain plant-specific NRC approval of alternative methods and analytical approaches to those specified in NFPA 805. It allows licensees maximum flexibility to identify and apply new methods of analysis that may be appropriately used within NFPA 805. This approval mechanism is broad enough even to allow licensees to apply risk-informed, performance-based methods to establish the (deterministic) fundamental elements of a fire protection program and the minimum design requirements for fire protection systems and features.

50.48(c)(4)(i) Satisfy the goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release.

50.48(c)(4)(ii) Maintain safety margins.

50.48(c)(4)(iii) Maintain fire protection defense-in-depth (fire prevention, fire suppression, and post-fire safe shutdown capability.)

III. Analytical Processes for Plant-Wide Reviews

This section describes how a licensee choosing to comply with NFPA 805 would conduct a plant-wide review in accordance with the NFPA 805 analytical process (under paragraphs (c)(3)(ii) of the proposed rule). The discussion first addresses the actions of licensees for operating light water reactors, and then addresses the actions of licensees for light water reactors that are undergoing decommissioning.

A. Operating Reactors:

Section 2.2.1: Licensee establishes fundamental fire protection elements in accordance with Chapter 3 of NFPA 805 on a plant-wide basis, taking credit for alternatives that have been “previously approved” by the authority having jurisdiction (AHJ) (NRC).

Section 2.2.2: Licensee identifies fire area boundaries and fire hazards (possibly unchanged from the previous fire protection licensing basis).

Sections 2.2.3, 2.2.4, and 2.2.5: Licensee evaluates plant design on a fire area basis against the nuclear safety and radiation release performance criteria of Chapter 1, using

either a deterministic or performance-based approach. A result of this analysis is the identification of the structures, systems, and components that are necessary to meet the two criteria (analogous to the “protected systems” identification process of Appendix R analyses).

Sections 2.2.6, 2.2.7, and 2.2.8: For a deterministic nuclear safety analysis, the licensee compares the existing fire protection licensing basis (e.g., exemptions granted under Appendix R to 10 CFR Part 50, SERs, approved deviations, and licensee-developed generic letter (GL) 86-10 engineering evaluations [see GL 86-10 Paragraph C: “Documentation Required to Demonstrate Compliance”]) against the deterministic approach criteria of Section 4.2.3 of NFPA 805. A licensee may demonstrate compliance with Section 4.2.3 using existing engineering equivalency evaluations (e.g., licensee-developed GL 86-10 engineering evaluations, or NRC approved exemption requests) if the licensee ensures that the reactor plant meets the threshold of Section 2.2.7 (that “these existing engineering evaluations shall clearly demonstrate an equivalent level of fire protection compared to the deterministic requirements”).

For a performance-based nuclear safety analysis, the licensee will perform the engineering analyses (e.g., using fire modeling or probabilistic safety analysis (PSA) methods) under either Section 4.2.4.1 or 4.2.4.2 of NFPA 805. For a deterministic or performance-based radiation release analysis, the licensee performs the analytical method in Section 4.3 to assess the fulfillment of Chapter 1 criteria.

Section 2.2.9: In the event of a change to a fire protection program element during the above analytical steps, the licensee will evaluate the risk impact to ensure that the public risk associated with fire-induced nuclear fuel damage accidents is low, and that adequate defense-in-depth and safety margins are maintained.

Section 2.2.10: The licensee shall establish a monitoring program to assess the performance of the fire protection program in meeting NFPA performance criteria.

Section 2.2.11: The fire protection program documentation must be developed and maintained in such a manner that facility design and procedural changes that could affect the fire protection engineering analysis assumptions can be identified and analyzed (see Section 2.3).

Section 2.7 of the standard has adequate requirements for the retention of licensee NFPA 805 analyses and evaluations so that NRC inspectors may effectively monitor the conduct and effect of licensee fire protection program changes.

B. Decommissioning Reactors: A licensee of a light water reactor that is being decommissioned or has permanently ceased operations would comply with the requirements of Chapter 5 of NFPA 805.

IV. Licensee Impact

Licensees may voluntarily adopt the NFPA 805 standard, and any additional burden associated with adopting the standard will be at their discretion. The NRC anticipates that significant additional analysis, beyond that currently documented by licensees, may be elected by licensees that choose to adopt NFPA 805. The level of effort required for each plant will depend upon the degree to which risk-informed and performance-based approaches have already been adopted for the subject reactor plant (e.g., within the exemption or deviation processes for 10 CFR 50.48 and Appendix R to 10 CFR Part 50), and the degree to which the licensee initiates changes to the reactor plant.

V. Benefits

The current fire protection requirements (10 CFR 50.48) were developed before the NRC or industry had the benefit of probabilistic risk assessments (PRAs) for fires, and before there was a significant body of operating experience. A revised fire protection rule could provide flexibility in achieving adequate fire protection. In addition, as discussed in SECY 96-134, "Options for Pursuing Regulatory Improvement in Fire Protection Regulations for Nuclear Power Plants," dated June 21,1996, a revised fire protection rule that would facilitate the use of alternative approaches may reduce the need for exemptions.

VI. Additional Issue for Public Comment

As well as seeking public comment on the proposed rule itself, the NRC is also seeking public comment regarding any other alternative consensus standards that the agency should consider as voluntary alternatives to the current fire protection regulations. The NRC expects that

once adopting the new licensing basis that provides additional flexibility above that provided by Appendix R, licensees will not return to an Appendix R licensing basis. Never the less, the NRC requests a response to the following specific questions: (1) Is there any likelihood that licensees who are approved to use NFPA 805 would later decide that they would like to comply with paragraph (b) and the licensing basis that existed immediately prior to approval of NFPA 805? and (2) Do you agree that a license amendment would be required to revert to compliance with Section 50.48(b), and if not, why not?

VII. Availability of Documents

The NRC is making the documents identified below available to interested persons through one or more of the following methods, as indicated.

Public Document Room (PDR). The NRC's Public Document Room is located at One White Flint North, 11555 Rockville Pike, Rockville, Maryland.

Rulemaking Forum Web Site. The NRC's interactive Rulemaking Forum Web site is located at http://ruleforum.llnl.gov. These documents may be viewed and downloaded electronically via this Web site.

NRC's Public Electronic Reading Room (PERR). The NRC's Public Electronic Reading room is located at http://www.nrc.gov/reading-rm.html. The subject document may be accessed using the ADAMS accession number (e.g., "ML##########") provided below.

The NRC staff contact. The NRC's task manager for this rulemaking in the Office of Nuclear Reactor Regulation (NRR) is Leon Whitney. Mr. Whitney can be reached by telephone at 301-415-3081, or via email to lew1@nrc.gov.

Document	PDR	Web	PERR	NRC Staff
Regulatory Analysis	X	X	ML021300034	X
Environmental Assessment	X	X	ML021300039	X
NFPA 805 Rule Language	X	X	ML021300030	X
Comments Received	X	X	ML020360038	
Comments Received	X	X	ML020360039	
Comments Received	X	X	ML020360043	
Comments Received	X	X	ML020390248	
Comments Received	X	X	ML020630629	

VIII. Electronic Access for Comment Submission

In addition to the addresses previously provided (see ADDRESSES section above) for submitting written comments, interested parties may submit comments via the NRC's interactive Rulemaking Forum Web site (http://ruleforum.llnl.gov). The Rulemaking Forum enables the industry and public to transmit comments as files (in any format), provided that your web browser supports that function. Information on the use of the Rulemaking Forum is available on the site. For additional assistance on the use of the interactive Rulemaking Forum Web site, contact Ms. Carol A. Gallagher by telephone at 301-415-5905 or via email to cag@nrc.gov.

IX. Plain Language

The Presidential memorandum entitled, “Plain Language in Government Writing,” dated June 1, 1998, directed that the Government must write in plain language. This memorandum was published in the Federal Register on June 10, 1998 (63 FR 31883). In complying with this directive, the NRC has made editorial changes to improve the readability of the proposed rule language. The NRC requests comment on the proposed rule specifically with respect to the clarity and effectiveness of the language used. Comments should be sent to the addresses listed under either the ADDRESSES or “Electronic Access for Comment Submission” sections above.

X. Voluntary Consensus Standards

The National Technology Advancement and Transfer Act of 1995, P.L. 104-113, requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies, unless the use of such standards is inconsistent with applicable law or otherwise impractical. Under this proposed rule, the NRC would provide holders of operating licenses for nuclear power plants with the option to voluntarily adopt NFPA 805, as excepted, as an alternative set of fire protection requirements. The NRC is not aware of any consensus standard that could be adopted instead of NFPA 805, but will consider using an alternative standard if identified. If an alternative consensus standard is identified, the notifying submittal from the member of the public or industry should explain how it is comparable to, and how it could be used in addition to or instead of, NFPA 805 in the proposed rule.

XI. Environmental Assessment and Finding of No Significant Environmental Impact

The Commission has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in Subpart A of 10 CFR Part 51, that this proposed rule, if adopted, would not be a major Federal action significantly affecting the quality of the human environment and, therefore, an environmental impact statement is not required. The NRC determined that there would not be significant radiological or non-radiological impacts. Under NFPA 805, the environment would continue to be adequately protected because the methods used for fire detection, suppression, and mitigation are the same as those used under the existing fire protection requirements. Further there will be no change in the release of radiological or nonradiological effluents to the environment.

This determination is based on an evaluation of the goals, objectives and performance criteria in NFPA 805. These provide for defense-in-depth to control fires; control of plant reactivity, coolant inventory, and pressure; decay heat removal; vital auxiliaries; and process monitoring to minimize radioactive releases. The NRC has determined that the environmental impacts of the proposed action, the no-action alternative, and an alternative in which the NRC would develop its own risk-informed standard, were similar. Further, the NRC determined that the proposed action does not involve the use of any different resources than those considered in the current rule.

The general public should note that the NRC is seeking public participation. Comments on any aspect of the environmental assessment may be submitted to the NRC as indicated under either the ADDRESSES or "Electronic Access for Comment Submission" sections above.

The NRC has sent a copy of the draft environmental assessment and this proposed rule to every State Liaison Officer and requested their comments on the environmental assessment.

XII. Paperwork Reduction Act Statement

This proposed rule contains information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq). This rule will be submitted to the Office of Management and Budget for review and approval of the information collection requirements.

The burden to the public associated with these information collections is estimated to average four hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the necessary data, and completing and reviewing the information collections. In addition, there is an estimated one-time burden of 20,000 to 65,000 hours for each licensee who chooses to use NFPA 805 to complete the required one-time plant-wide reanalysis of the reactor's fire protection systems, equipment, features, and procedures. The NRC is seeking public comment on the potential impact of the information collections contained in the proposed rule and responses to the following questions: (1) Is the proposed information collection necessary for the proper performance of the functions of the NRC, and will the information have practical utility? (2) Is the burden estimate accurate? (3) Is there a way to enhance the quality, utility, and clarity of the information to be collected? and (4) How can the burden of the information collection be minimized (including the use of automated collection techniques)?

Send comments on any aspect of these proposed information collections, including suggestions for reducing the burden, to the Records Management Branch, Mail Stop T6-E6, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by email to infocollects@nrc.gov; and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0011), Office of Management and Budget, Washington, DC 20503.

Comments on the above issues should be submitted by **(insert date 75 days after publication in the Federal Register**). Comments received after this date will be considered if it is practical to do so, but assurance of consideration cannot be given for comments received after this date.

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

XIII. Regulatory Analysis

The Commission has prepared a draft regulatory analysis of this proposed regulation. The analysis examines the costs and benefits of the alternatives considered by the Commission. The draft regulatory analysis may be examined and/or copied for a fee at the NRC's Public Document Room, located at One White Flint North, Room 01-F15, 11555 Rockville Pike, Rockville, Maryland.

The Commission requests public comment on the draft regulatory analysis. Comments on the draft analysis may be submitted to the NRC as indicated in either the ADDRESSES or "Electronic Access for Comment Submission" sections above.

XIV. Regulatory Flexibility Act Certification

As required by the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the Commission certifies that this proposed rule, if adopted, would not have a significant economic impact on a substantial number of small entities. This proposed rule would affect only the licensing and operation of nuclear power plants. The companies that own these plants do not fall within the definition of "small entities" found in the Regulatory Flexibility Act or within the size standards established by the NRC in 10 CFR 2.810.

XV. Backfit Analysis

The NRC has determined that a backfit analysis is not required for this proposed rule, because the rule does not involve any provisions that would impose backfits as defined in 10 CFR 50.109(a)(1). The proposed rule will establish voluntary alternative fire protection requirements for licensees with construction permits prior to January 1, 1979 (all existing LWR reactor plants). Licensees may adopt NFPA 805 as an alternative set of fire protection requirements by submitting a license amendment. However, current licensees may continue to comply with existing requirements. Any additional burden incurred by adopting NFPA 805 would be at the licensee's discretion. The proposed rule does not impose any new requirements, and therefore, does not constitute a backfit as defined in 10 CFR 50.109(a)(1).

List of Subjects in 10 CFR Part 50

The current list of subjects addressed in 10 CFR Part 50 includes Antitrust, Classified Information, Criminal Penalties, Fire Protection, Intergovernmental Relations, Nuclear Power Plants and Reactors, Radiation Protection, Reactor Siting Criteria, and Reporting and Recordkeeping Requirements.

For the reasons given in the preamble and under the authority of the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and 5 U.S.C. 553, the NRC is proposing to adopt the following amendments to 10 CFR Part 50:

PART 50 - DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES

1. The authority citation for Part 50 continues to read as follows:

AUTHORITY: Secs. 102, 103, 104, 105, 161, 182, 183, 186, 189, 68 Stat. 936, 938, 948, 953, 954, 955, 956, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2132, 2133, 2134, 2135, 2201, 2232, 2233, 2239, 2282); secs. 201, as amended, 202, 206, 88 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846).

Section 50.7 also issued under Pub. L. 95-601, sec. 10, 92 Stat. 2951, as amended by Pub. L. 102-486, sec. 2902, 106 Stat. 3123 (42 U.S.C. 5851). Section 50.10 also issued under secs. 101, 185, 68 Stat. 936, 955, as amended (42 U.S.C. 2131, 2235); sec. 102, Pub. L. 91-190, 83 Stat. 853 (42 U.S.C. 4332). Sections 50.13, 50.54(dd), and 50.103 also issued under sec. 108,

68 Stat. 939, as amended (42 U.S.C. 2138). Sections 50.23, 50.35, 50.55, and 50.56 also issued under sec. 185, 68 Stat. 955 (42 U.S.C. 2235). Sections 50.33a, 50.55a and Appendix Q also issued under sec. 102, Pub. L. 91-190, 83 Stat. 853 (42 U.S.C. 4332). Sections 50.34 and 50.54 also issued under Pub. L. 97-415, 96 Stat. 2073 (42 U.S.C. 2239). Section 50.78 also issued under sec. 122, 68 Stat. 939 (42 U.S.C. 2152). Sections 50.80 - 50.81 also issued under sec. 184, 68 Stat. 954, as amended (42 U.S.C. 2234). Appendix F also issued under sec. 187, 68 Stat. 955 (42 U.S.C. 2237).

2. In § 50.48, paragraph (c) is added to read as follows:

§ 50.48. Fire protection.

* * * * *

(c) *National Fire Protection Standard NFPA 805.*

(1) *Approval of incorporation by reference.* National Fire Protection Association (NFPA) Standard 805, "Performance-Based for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition" (NFPA 805), which is referenced in this section, was approved for incorporation by reference by the Director of the Federal Register. A notice of any changes made to the material incorporated by reference will be published in the Federal Register. Copies of NFPA 805 may be purchased from the NFPA Customer Service Department, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101 and in PDF format through the NFPA Online Catalog (www.nfpa.org) or by calling 1-800-344-3555 or 617-770-3000. Copies are also available for inspection at the NRC Library, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852-2738, and at the NRC Public Document Room, Building One White Flint North,

Room O1-F15, 11555 Rockville Pike, Rockville, Maryland 20852-2738. Copies are also available at the Office of the Federal Register, 800 N. Capitol Street, Suite 700, Washington, DC.

(2) *Exceptions, modifications, and supplementation of NFPA 805.* As used in this section, references to NFPA 805 are to the 2001 Edition, with the following exceptions, modifications, and supplementations:

(i) Life Safety Goal. The Life Safety Goal of Section 1.3.3 is not endorsed.

(ii) Plant Damage/Business Interruption Objectives. The Plant Damage/Business Interruption Objectives of Section 1.3.4 of NFPA 805 are not endorsed.

(iii) Use of Feed-and-Bleed. In demonstrating compliance with the performance criteria of Sections 1.5.1(b) and (c) of NFPA 805, a high pressure charging/injection pump coupled with the pressurizer power-operated relief valves (PORVs) as the sole fire-protected safe shutdown path for maintaining reactor coolant inventory, pressure control, and decay heat removal capability (i.e., feed-and-bleed) for pressurized-water reactors (PWRs) is not permitted.

(iv) Uncertainty Analysis. An uncertainty analysis performed in accordance with Section 2.7.3.5 is not required to support deterministic approach calculations.

(v) Existing Cables. In lieu of installing cables meeting flame propagation tests as required by Section 3.3.5.3 of the standard, a flame retardant coating may be applied to the electric cables, or an automatic fixed fire suppression system may be installed to provide an equivalent level of protection. In addition, the italicized exception to Section 3.3.5.3 is not endorsed.

(vi) Water Supply and Distribution. The italicized exception to Section 3.6.4 is not endorsed.

(3) *Compliance with NFPA 805*.

(i) A licensee may maintain a fire protection program that complies with NFPA 805 as an alternative to complying with paragraph (b) of this section for plants licensed to operate before January 1, 1979; the fire protection license conditions for plants licensed to operate after January 1, 1979; or paragraph (f) of this section for plants for which licensees have submitted the certifications required under 10 CFR 50.82(a)(1). The licensee shall submit a request to comply with NFPA 805 in the form of an application for license amendment under § 50.90.
The application must identify any orders and license conditions that must be revised or superseded, and contain any necessary revisions to the plant's technical specifications and the bases therefore. The Director of the Office of Nuclear Reactor Regulation, or a designee of the Director, may approve the application if the Director or designee determines that the licensee has identified orders, license conditions, and the technical specifications that must be revised or superseded, and that any necessary revisions are adequate. Any approval by the Director or the designee of the Director shall be in the form of a license amendment approving the use of NFPA 805 together with any necessary revisions to the technical specifications.

(ii) The licensee shall complete its implementation of the methodology in Chapter 2 of NFPA 805 (including all required evaluations and analyses) and, upon completion, modify the fire protection plan required by paragraph (a) of this section to reflect the licensee's decision to comply with NFPA 805, before changing its fire protection program or nuclear power plant as permitted by NFPA 805.

(4) *Alternative Methods and Analytical Approaches.* A licensee may submit a request to use alternative methods and analytical approaches, including fundamental fire protection program and minimum design requirements identified in Chapter 3 of NFPA 805, in lieu of those methods and approaches specified in NFPA 805. The request must be in the form of an application for license amendment under § 50.90. The Director of the Office of Nuclear Reactor Regulation, or

designee of the Director, may approve the application if the Director or designee determines that the alternative methods and analytical approaches:

(i) Satisfy the goals, performance objectives, and performance criteria specified in NFPA 805 related to nuclear safety and radiological release.

(ii) Maintain safety margins.

(iii) Maintain fire protection defense-in-depth (fire prevention, fire suppression, and post-fire safe shutdown capability).

Dated at Rockville, Maryland, this day of , 2002.

For the U.S. Nuclear Regulatory Commission

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Annette Vietti-Cook

Secretary of the Commission.